

Division of Environmental Health and Communicable Disease Prevention					
Section: 4.0 Diseases and Conditions Revised 7/03					
Subsection: Hepatitis C	Page 1 of 14				

Hepatitis C Table of Contents

Hepatitis C Fact Sheet Viral Hepatitis Case Report

Pamphlet: Hepatitis C

Depth in Theating	Division of Environmental Health and Communicable Disease Prevention						
	Section: 4.0 Diseases and Conditions Revised 7/03						
No.	Subsection: Hepatitis C	Page 2 of 14					

Hepatitis C

$\underline{Overview}^{(1,2)}$

For a more complete description of hepatitis C, refer to the following text:

- Control of Communicable Diseases Manual (CCDM).
- Red Book, Report of the Committee on Infectious Diseases.

Comment: Hepatitis C accounted for the majority of infections previously referred to as hepatitis non-A, non-B.

Case Definition(3)

Hepatitis C (Acute)

For surveillance purposes, a confirmed case of acute hepatitis C is one that meets both clinical and laboratory criteria:

Clinical criteria

An acute illness with

- -discrete onset of symptoms consistent with acute viral hepatitis and
- -jaundice **or** elevated serum aminotransferase levels (liver enzymes)

Laboratory criteria for diagnosis

- -Serum aminotransferase levels > 7 times the upper limit of normal, and
- -Antibody to hepatitis C virus (anti-HCV) positive by EIA, verified by a supplemental test (e.g., RIBA or PCR) or an EIA with a S/CO > 3.8, and
- -IgM anti-HAV negative, and
- -IgM anti-HBc negative (if done) or HBsAg negative.

EIA – Enzyme Immunoassay

- **RIBA** Recombinant Immunoblot Assay, used to confirm a positive EIA test.
- **PCR** Polymerase Chain Reaction used to detect the presence of the HCV virus and determine the viral load of the individual.
- S/CO Signal Cut-Off ratio, measures the strength of the EIA reaction. S/CO ratios greater than or equal to 3.8 have a 95% chance of being RIBA positive.

Case classification

Confirmed: a case that meets the clinical case definition **and** the laboratory criteria.



\mathbf{D} $\mathbf{C}\mathbf{D}$	TT 1.1 1.4	a ' 11	D' D'
Division of Environmental	Health and (Ommunicable	I headed Provention
Division of Environmental	i icaiui and v	Communicanc	Discase Frederica

Section: 4.0 Diseases and Conditions	Revised 7/03

Subsection: Hepatitis C Page 3 of 14

Comment

Patient liver enzymes (ALT) must be greater than seven times the upper limit of normal. According to CDC, 97% of patients with acute hepatitis C will have ALT's greater than this level. (4)

Hepatitis C (Chronic Infection)

Case Definitions for Confirmed, Probable, and Suspect Chronic Cases: (5)

Clinical criteria

None

Cases in these categories may or may not have an acute onset of illness or symptoms and may or may not have elevated liver enzyme test results.

The presence or absence of other viral markers of hepatitis are not relevant to these classifications.

Chronic HCV Case Classification

Confirmed:

- -Positive antibody to hepatitis C virus (anti-HCV) by EIA verified with a S/CO > 3.8, or by a supplemental test (e.g., RIBA, PCR), **or**
- -Positive RIBA or PCR test in the absence of other tests.

Probable:

-Elevated ALT values and positive anti-HCV by EIA test unverified by a more specific essay.

Suspect:

-Positive anti-HCV by EIA test and does not meet the "confirmed" or "probable" chronic case classifications for HCV infection.

<u>Information Needed for Investigation</u>

Verify the diagnosis. What laboratory tests were conducted? What were the results? What were the case's clinical symptoms? Is this an acute case or is this a chronic hepatitis C infection? **Establish the extent of illness**. Determine if household or other close contacts are, or have been ill, by contacting the health care provider, patient or family member.

Contact the Regional Communicable Disease Coordinator if an outbreak is suspected.

Delive in Theating	Division of Environmental Health and Communicable Disease Prevention					
	Section: 4.0 Diseases and Conditions Revised 7/03					
Khun	Subsection: Hepatitis C	Page 4 of 14				

Case/Contact Follow-Up And Control Measures

Determine the source of infection:

- Determine if the case has any of the following risk factors for this disease: had received clotting factor concentrates before 1987; had received transfusions of blood or blood components before 1992; were notified that they had received blood from a donor who later tested positive for HCV infection, had received an organ transplant before 1992. Or, who recently or in the past, had needle-sticks, sharps or mucosal exposure to HCV-positive blood, engaged in injecting drug use or any activity that may involve the sharing or re-use of needles such as tattooing/body piercing, had multiple sex partners, a sex partner with hepatitis C, or other close contact with an individual with hepatitis C. (6)
- Determine if the case has received counseling regarding this virus and the methods to prevent transmission.

Control Measures

See the Hepatitis C section of the <u>Control of Communicable Diseases Manual</u> (CCDM), "Control of patient, contacts and the immediate environment". See the Hepatitis C section of the Red Book.

Laboratory Procedures

Specimens:

Testing for hepatitis C is not currently performed at the Missouri State Public Health Laboratory. Contact the testing laboratory for specific collection and transport requirements.

Reporting Requirements

Hepatitis C is a Category II disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 3 days of first knowledge or suspicion.

- 1. For confirmed acute hepatitis C cases, complete a "DHSS Disease Case Report" form (CD-1) and CDC's "Viral Hepatitis Case Report" form.
- 2. For confirmed, probable and suspect chronic hepatitis C cases, submit a completed CD-1 and/or a legible lab report with patient's address.
- 3. For confirmed chronic cases ≤ 30 years old* or any case that merits additional investigation complete a CD-1 and CDC's "Viral Hepatitis Case Report form.
- 4. Send completed forms to the appropriate Regional Health Office.
- 5. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.

Missouri Department of Health and Senior Services Communicable Disease Investigation Reference Manual



	Division of Environmental Health and Communicable Disease Prevention					
Section: 4.0 Diseases and Conditions Revised 7/03						
	Subsection: Hepatitis C	Page 5 of 14				

- 6. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
- 7. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator

References

- 1. Chin, James, ed. "Hepatitis C." *Control of Communicable Diseases Manual* (CCDM), 17th ed. Washington, D.C.: American Public Health Association, 2000: 251- 253
- American Academy of Pediatrics. "Hepatitis C." In: Pickerton, LK. ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL. 2000: 302-306.
- 3. Centers for Disease Control and Prevention. *Case Definitions for Infectious Diseases Web Site*, http://www.cdc.gov/EPO/DPHSI/casedef/hepatitis_viral_acute_current.htm
- 4. Hepatitis Control Report, *Big Changes are Coming for Hepatitis C Surveillance*, Summer 2001, Volume 6, Number 2.
- 5. Missouri Department of Health and Senior Services- Section of Communicable Disease Control and Veterinary Public Health surveillance case definition.
- 6. Centers for Disease Control and Prevention. *Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease*. MMWR 1998:47 (No. RR-19): 1-39.

Other Sources of Information

Mandell, Gerald L., John E. Bennett, & Raphael Dolin, Eds. *Principles and Practice of Infectious Diseases*, 5th. Ed. New York: Churchill Livingstone, 2000: 1279-1295, 1736-1753.

Evans, Alfred S. and Richard A. Kaslow, Eds. *Viral Infections of Humans Epidemiology and Control*; 4th ed. Eds. New York: Plenum, 1997: 387-394.

Centers for Disease Control and Prevention. *Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease*. MMWR 1998:47 (No. RR-19): 1-39.

^{*}Investigation of new cases 30 years old and younger is designed to capture risk, behavior, and medical evaluation information, and provide opportunities for disease and prevention education. Information collected from individuals recently infected will help further enhance prevention education efforts through identifying risky behaviors.

Hepatitis C (Viral)

FACT SHEET

What is hepatitis C?

Hepatitis C is an inflammation of the liver that is caused by the hepatitis C virus. This inflammation can result in serious liver damage. Eighty-five percent of hepatitis C infected individuals develop chronic hepatitis. Hepatitis C is now the major reason for liver transplantation in the United States.

How common is hepatitis C?

This year alone, some 30,000 Americans will become infected with hepatitis C in the United States. If the body does not clear the virus in six months, the infection is said to be chronic. Currently, an estimated 4 million people have chronic hepatitis C in the United States. Missouri is estimated to have 95,000 persons infected with hepatitis C.

Each year, 8,000-10,000 Americans die from complications of hepatitis C. The death rate is expected to triple within the next 10 to 20 years, exceeding the death rate associated with AIDS.

Who is at risk for hepatitis C?

Hepatitis C is a bloodborne pathogen, and is transmitted primarily by large or repeated direct percutaneous exposure (direct skin puncture). Injection drug use accounts for greater than 60% of chronic infections.

Other risks include:

- Blood transfusion or organ transplant recipient prior to 1992
- Occupational exposure (health care workers)
- Hemodialysis patients
- Practicing high-risk sexual activity (multiple partners, history of STDs, co-infected with HIV)
- Using non-injection illegal drugs (intranasal cocaine)
- Tattooing and body piercing with contaminated equipment
- IV drug use even just once
- Sharing personal items such as razor, toothbrush, water pic, nail clippers
- Recipient of blood products (human albumin or clotting factor concentrates) prior to 1987

Transmission between mother and baby has been documented, although the risk is low, no more than 6%. Breastfeeding does not appear to transmit hepatitis C.

What are the symptoms?

Some people have loss of appetite, tiredness, nausea and vomiting, vague stomach pain and jaundice (a yellowing of the skin and whites of the eyes). Some people do not have any symptoms.

How soon do symptoms occur?

Symptoms may occur from two weeks to six months after exposure but usually within 6-9 weeks. These symptoms are during the acute phase of the disease. Liver cirrhosis and permanent liver damage from hepatitis C may not be evident for up to 20 years after the initial exposure to the virus.

When and for how long is a person able to spread hepatitis C?

A person with hepatitis C is contagious one or two weeks before symptoms appear and during the entire time the person is ill. Until more is learned about this disease, all persons who have been diagnosed as having hepatitis C should be considered infectious (able to pass the hepatitis C virus through their blood and body fluids).

What are the complications of hepatitis C?

Eighty-five percent (85%) of persons infected with hepatitis C develop chronic hepatitis and remain infectious to other people. Cirrhosis (scarring of the liver) can occur within 2 years of the onset of infection in at least 20% of persons with chronic hepatitis C. Risk for chronically infected persons to develop liver cancer is 1-5%. The course of illness is influenced by various factors, especially alcohol consumption.

Can hepatitis C be prevented?

There is no vaccine for hepatitis C.

A healthy lifestyle can reduce chances of infection. Avoid illegal injection drugs use, intranasal cocaine use and contact with other people's blood. Practice safe sex and limit sexual partners (a monogamous relationship has the lowest risk for acquiring hepatitis C). Avoid sharing razors, toothbrushes, pierced earrings, needles and syringes with anyone; and make certain needles for body piercing and tattooing have been properly sterilized. You cannot contract hepatitis C by casual contact – kissing, hugging, sneezing, coughing, and shaking hands. There is no need to prevent the hepatitis C positive person from attending work, school, or daycare.

For those who are infected, avoiding alcohol and use of street drugs can be reduce damage to the liver caused by HCV. Consult your physician about any medications you may be taking. Vaccination against hepatitis A and B is recommended, since a liver compromised by hepatitis C is more susceptible to damage when co-infected with other viruses.

How is hepatitis C diagnosed?

Blood tests can be preformed to identify individuals who have the hepatitis C virus. Your doctor can perform these tests.

Is there a medical treatment for hepatitis C?

Yes. Combinations of two compounds, interferon and ribivirin, have been shown to be effective for certain patients. The recommendations for which patients should be treated are changing as more is learned about this disease. Contact your physician for information about the current treatment guidelines.

Missouri Department of Health and Senior Services Section for Communicable Disease Prevention Phone: (866) 628-9891 or (573) 751-6113 U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES PUBLIC HEALTH SERVICE

VIRAL HEPATITIS CASE REPORT

CDC
Centers for Disease Contro
and Prevention
Hepatitis Branch, (G37)

Atlanta, Georgia 30333 The following questions should be asked for every case of viral hepatitis Prefix: (Mr. Mrs. Miss Ms. etc) ____ __ Last: __ _ First: __ Preferred Name (nickname): Maiden: Address: Street: Phone: (Zip Code: __ City: _ ---- Only data from lower portion of form will be transmitted to CDC ------State: Date of Public Health Report__ __ / __ __ / __ __ _ County: Was this record submitted to CDC through the NETSS system? Yes No 🗌 If yes, please enter NETSS ID NO. If no, please enter **STATE CASE NO.** DEMOGRAPHIC INFORMATION RACE (check all that apply): ETHNICITY: Amer Indian or Alaska Native Black or African American White Hispanic Asian Native Hawaiian or Pacific Islander Other Race, specify: _ Non-hispanic Female Unk PLACE OF BIRTH: Пusa Other: SEX: Male Other/Unknown DATE OF BIRTH: MM/DD/YYYY(00 = <1 yr , 99 = Unk)AGE: _ (years) CLINICAL & DIAGNOSTIC DATA **REASON FOR TESTING:** (Check all that apply) Symptoms of acute hepatitis Evaluation of elevated liver enzymes Screening of asymptomatic patient with reported risk factors Blood / organ donor screening Screening of asymptomatic patient with no risk factors (e.g., patient requested) Follow-up testing for previous marker of viral hepatitis Prenatal screening Unknown Other: specify: DIAGNOSTIC TESTS: CHECK ALL THAT APPLY CLINICAL DATA: Neg Unk MM / D D / Y Y Y Y Diagnosis date: • Total antibody to hepatitis A virus [total anti-HAV] Yes No Unk IgM antibody to hepatitis A virus [IgM anti-HAV] Is patient symptomatic?..... Hepatitis B surface antigen [HBsAg]...... if yes, onset date: $\[\] \] / \[\]$ Total antibody to hepatitis B core antigen [total anti-HBc] Was the patient IgM antibody to hepatitis B core antigen [IgM anti-HBc]........ П • Jaundiced? Hospitalized for hepatitis?..... Antibody to hepatitis C virus [anti-HCV] Was the patient pregnant ? - anti-HCV signal to cut-off ratio _____ due date: MM/DD/YYYY • Supplemental anti-HCV assay [e.g., RIBA] Did the patient die from hepatitis? HCV RNA [e.g., PCR] • Date of death: M M / DD / Y Y YAntibody to hepatitis D virus [anti-HDV]..... П Antibody to hepatitis E virus [anti-HEV] LIVER ENZYME LEVELS AT TIME OF DIAGNOSIS • If this case has a diagnosis of hepatitis A that has not been No Unk serologically confirmed, is there an epidemiologic link between ALT [SGPT] Result Upper limit normal this patient and a laboratory-confirmed hepatitis A case? AST [SGOT] Result _____ Upper limit normal_ • Date of ALT result MM/DD /Y Y YY Date of AST result <u>MM/DD/YYYY</u> DIAGNOSIS: (Check all that apply) Acute hepatitis A Chronic HBV infection Perinatal HBV infection Acute hepatitis B Hepatitis Delta (co- or super-infection) Acute hepatitis C HCV infection (chronic or resolved) Acute hepatitis E Acute non-ABCD hepatitis

NETSS ID NO.	
--------------	--

STATE CASE NO.

During the 2-6 weeks prior to onset of symptoms-	X7 XI. XI.I
Was the patient a contact of a person with confirmed or suspected	Yes No Unk
hepatitis A virus infection?	
If yes, was the contact (check one)	
• household member (non-sexual)	
• sex partner	
child cared for by this patient	
babysitter of this patient	
• playmate	
• other	
Was the patient	
• a child or employee in a day care center, nursery, or preschool ?	Ц Ц Ц
a household contact of a child or employee in a	
day care center, nursery or preschool ?	
If yes for either of these, was there an identified hepatitis A case	
in the child care facility?	
Please ask both of the following questions regardless of the patient's	gender.
In the 2- 6 weeks before symptom onset how many	0 1 2-5 >5 Unk
• male sex partners did the patient have?	
• female sex partners did the patient have?	
In the 2- 6 weeks before symptom onset	Yes No Unk
Did the patient inject drugs not prescribed by a doctor?	
Did the patient use street drugs but not inject?	
Did the patient travel outside of the U.S.A. or Canada	
• If yes, where? 1)2)	
(Country) 3)	
In the 3 months prior to symptom onset	
Did anyone in the patient's household travel outside of the U.S. A. or Cana	
• If yes, where? 1) 2)	
(Country) 3)	
Is the patient suspected as being part of a common-source outbreak? If yes, was the outbreak	····················
l * * *	
Foodborne- associated with an infected food handler	
Foodborne - NOT associated with an infected food handler	··············
• specify food item	
Waterborne	
Source not identified	·····
Was the patient employed as a food handler during the TWO WEEKS	
prior to onset of symptoms or while ill?	
VACCINATION HISTORY	
Yes No Unk	
Has the patient ever received the hepatitis A vaccine?	
• If yes, how many doses?	
• In what year was the last dose received?	
Has the patient ever received immune globulin?	
• If yes, when was the last dose received? / mo / yr	

	STATE CASE NO.
Patient History- Acute Hepatitis B	NETSS ID NO.
During the 6 weeks- 6 months prior to onset of symptoms was the patient a contact of a person with confirmed or suspected acute or chronic hepatitis B virus infection? Yes No Unk If yes, type of contact • Sexual	Ask both of the following questions regardless of the patient's gender. In the 6 months before symptom onset how many 0 1 2-5 >5 Unk • male sex partners did the patient have?
During the 6 weeks- 6 months prior to onset of symptoms Did the patient- undergo hemodialysis?	During the 6 weeks- 6 months prior to onset of symptoms • Did the patient have any part of their body pierced (other than ear)? where was the piercing performed? (select all that apply) commercial correctional other parlor / shop facility • Did the patient have dental work or oral surgery?
having direct contact with human blood?	During his/her lifetime, was the patient <i>EVER</i> • incarcerated for longer than 6 months?
If yes, how many shots? 1 2 3+	Yes No Unk Was the patient tested for antibody to HBsAg (anti-HBs) within 1-2 months after the last dose? • If yes, was the serum anti-HBs ≥ 10mIU/ml?

'positive' or 'reactive')

Perinatal Hepatitis I	B Virus	Infection
-----------------------	---------	-----------

NETSS ID NO.						
STATE CASE NO)					

RACE OF MOTHER: Amer Ind or Alaska Native Black or African American Native Hawaiian or Pacific Islander	☐ White ☐ Unkno ☐ Other Race, specify:	Non-hispanic
	Yes No Unk	Other/Unknown
Was Mother born outside of United States?	If yes,	what country?
Was the Mother confirmed HBsAg positive prior to or at time of deliver	y ? 🔲 🦳	
If no, was the mother confirmed HBsAg positive after delivery?		
Date of HBsAg positive test result	<u>M M / D D / Y Y Y Y</u>	
How many doses of hepatitis B vaccine did the child receive? • When? • Dose 1- M M / D D / Y Y Y Y	0 1 2 3	
• Dose 2- M M / D D / Y Y Y Y		
• Dose 3- M M / D D / Y Y Y Y	Yes No Unk	
Did the child receive hepatitis B immune globulin (HBIG)?	📙 🔲	
If yes, on what date did the child receive HBIG?	<u>M M / D D / Y Y Y Y</u>	

Patient History- Acute Hepatitis C	NETSS ID NO. STATE CASE NO.
During the 2 weeks- 6 months prior to onset of symptoms was the patient a contact of a person with confirmed or suspected acute or chronic hepatitis C virus infection? Yes No Unk If yes, type of contact Sexual Household [Non-sexual]	Ask both of the following questions regardless of the patient's gender. In the 6 months before symptom onset how many 0 1 2-5 >5 Unk male sex partners did the patient have?
During the 2 weeks- 6 months prior to onset of symptoms Did the patient- undergo hemodialysis?	During the 2 weeks- 6 months prior to onset of symptoms • Did the patient have any part of their body pierced (other than ear)? where was the piercing performed? (select all that apply) commercial correctional other parlor / shop facility • Did the patient have dental work or oral surgery?
having direct contact with human blood?	During his/her lifetime, was the patient <i>EVER</i> • incarcerated for longer than 6 months?

D 41 4 TT1 4	TT 1919	O T70	T 0 4		
Patient History-	· Hebatītīs	C Virus	Intection	(chronic or	resolved

NETSS ID NO.										
STATE CASE NO.										

ı	of lif	fetime	risk	factors	for HCV	infection.	Routine	collection	of risk factor	
X	ever	collec	tion	of risk	factor inf	ormation to	or such r	ersons ma	v provide uset	ml

The following questions are provided as a guide for the investigation of	lifetime	risk	factors	s for HCV infection. Routine collection of risk factor	
information for persons who test HCV positive is not required. Howeve	r, collec	ction	of risk	k factor information for such persons may provide useful	
information for the development and evaluation of programs to identify	and cou	ınsel	HCV-	-infected persons.	
	Yes 1	No	Unk	Yes No	Unk
Did the patient receive a blood transfusion prior to 1992?				Was the patient ever employed in a medical or	
Did the patient receive an organ transplant prior to 1992?	- 🗖 i			dental field involving direct contact with human	
• Did the patient receive clotting factor concentrates produced prior to 1987?				blood?	
Was the patient ever on long-term hemodialysis?					
Has the patient ever injected drugs not prescribed by a doctor					
even if only once or a few times?					
Was the patient ever incarcerated?					
• Was the patient ever treated for a sexually transmitted disease?					
• Was the patient ever a contact of a person who had hepatitis ?					
If yes, type of contact					
Sexual					
Household [Non-sexual]					
• Other:					